

IN THE CLAIMS:

Please amend the claims as follows.

1 1. (currently amended) Monoatomic and monocrystalline
2 layer of diamond type carbon, this layer being characterized
3 in that it is formed on the surface of a monocrystalline
4 substrate of SiC and extends closely over the totality of
5 this substrate, said monocrystalline substrate of SiC being
6 one of a thin layer of monocrystalline SiC in cubic phase
7 β -SiC (100) formed on a platelet of Si or a platelet of
8 monocrystalline SiC in hexagonal phase.

2. Cancelled.

3. Cancelled.

1 4. (previously amended) Monoatomic and monocrystalline
2 layer according to claim 1, covered with a monocrystalline
3 layer of diamond formed by growth from the monoatomic and
4 monocrystalline layer, the latter acting as matrix.

1 5. (previously amended) Manufacturing process of a
2 monoatomic and monocrystalline layer of diamond type carbon,
3 this process being characterized in that one forms a
4 monocrystalline substrate in SiC terminated by a carbon
5 atomic plane according to a c(2x2) reconstruction, this
6 plane being a plane of carbon-carbon dimers of sp
7 configuration, and in that one carries out at least one
8 annealing of this substrate, this annealing being able to

9 transform the plane of carbon-carbon dimers of sp
10 configuration into a plane of carbon-carbon dimers of sp^3
11 configuration thus forming a monoatomic and monocrystalline
12 layer of diamond type carbon.

1 6. (previously amended) Process according to claim 5,
2 in which the SiC monocrystalline substrate is prepared from
3 a thin layer of monocrystalline SiC in cubic phase β -SiC
4 with a face (100) terminated by a layer of Si.

1 7. (previously amended) Process according to claim 5,
2 in which the SiC monocrystalline substrate is prepared from
3 a monocrystalline SiC platelet in hexagonal phase with a
4 face (1000) terminated by a layer of Si.

1 8. (previously amended) Process according to claim 6,
2 in which, to obtain the atomic plane of carbon according to
3 the reconstruction $c(2 \times 2)$, an annealing is carried out
4 capable of eliminating the layer of Si.

1 9. (previously amended) Process according to claim 6,
2 in which, to obtain the atomic plane of carbon according to
3 the reconstruction $c(2 \times 2)$, a deposit of hydrocarboned
4 molecules is made on the Si layer followed by cracking of
5 these molecules.

1 10. (original) Process according to claim 9, in which
2 the hydrocarboned molecules are chosen from among the group
3 comprising the molecules of C_2H_4 and the molecules of C_2H_2 .

1 11. (previously amended) Process according to claim 5,
2 in which, to transform the plane of carbon-carbon dimers of
3 sp configuration into a plane of carbon-carbon dimers of sp^3
4 configuration, one carries out an annealing or a plurality
5 of successive annealings, at a temperature approximately
6 equal to $1250^\circ C$, of the monocrystalline substrate in SiC
7 terminated by the atomic plane of carbon according to the
8 reconstruction $c(2 \times 2)$, the total time of annealing being
9 greater than or about equal to 25 minutes.

1 12. (previously amended) Process according to claim 7,
2 in which, to obtain the atomic plane of carbon according to
3 the reconstruction $c(2 \times 2)$, an annealing is carried out
4 capable of eliminating the layer of Si .

1 13. (previously presented) Process according to claim
2 7, in which, to obtain the atomic plane of carbon according
3 to the reconstruction $c(2 \times 2)$, a deposit of hydrocarboned
4 molecules is made on the layer of Si followed by a cracking
5 of these molecules.

1 14. (previously presented) Process according to claim
2 13, in which the hydrocarboned molecules are chosen from the
3 group comprising the molecules of C_2H_4 and the molecules of
4 C_2H_2 .